## REMARKS

Claims 1 and 3-16 remain in the present application.

Claims 1-3, 5, 6, 9, 10, 12-13 and 16 are rejected under 35 U.S.C. §102(b) as anticipated by, or in the alternative, under 35 U.S.C. §103(a) as obvious over Molnar et al. (U.S. Patent No. 6,267,644). Reconsideration of these rejections is respectfully requested for the following reasons.

The Molnar patent discloses a water-soluble liquid being dispersed in a matrix based on a polyurethane resin to reduce friction between an abrasive finishing layer of a pad containing abrasive particles and a wafer. Polyethylene glycol is used to make a water-soluble liquid to be dispersed in the matrix.

However, claim 1, as amended, recites a polishing pad having liquid microelements that are a non-water-soluble liquid and a hydrophilic matrix containing, for example, polyethylene glycol (See claim 5) for stably dispersing the liquid in the matrix.

In other words, in the Molnar patent, polyethylene glycol is used to fabricate a water-soluble liquid which is melted by a water solution during chemomechanical polishing (CMP) and plays the role of a lubricant between the surface of the pad and the water. In contrast, the claimed polishing pad of claim 1 has a hydrophobic liquid dispersed in the matrix in order to form micropores on the surface of the pad and to this end, the hydrophilic matrix is both novel and non-obvious over the cited reference.

Thus, the liquid and supporting structure used in the Molnar patent is very different from the claimed polishing pad as recited in the non-rejected claims. Since the liquid used in Molnar patent is a water soluble, i.e., hydrophilic material, it is melted in the hydrophilic matrix and is not dispersed therein when it is applied to the pad of the present application. These pores are not formed on the surface of the pad.

Claims 4 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Molnar et al as applied to claim 1, in view of James et al. (U.S. Patent No. 6,069,080).

The Molnar and James patents illustrate a material in which polyethylene glycol is used as one of a group of liquid lubricants, the material being dispersed in a matrix and acts as a lubricant for reducing friction between the surface of a pad and the surface of a wafer, and the matrix and the liquid lubricant exist as separate materials without chemical combination. Thus, the lubricants act as a plasticizer and reduce the modulus of the material.

However, in the present application, polyethylene glycol is a component of urethane which is a material for the matrix and is used for the purpose of fabricating a hydrophilic matrix for dispersing a hydrophobic liquid in the matrix. That is, polyethylene glycol forms a chemical combination with the material used in forming the matrix and thus does not act as a plasticizer like the liquid disclosed in Molnar patent and the modulus of the fabricated pad is not reduced. Thus, neither claims 4 nor 15 as recited are obvious over the cited art.

Claim 7 is rejected under 35 U.S.C. §103(a) as being unpatentable over Molnar et al. as applied to claim 1, and further in view of Merchant et al. (U.S. Patent No. 6,364,744).

The Merchant patent, while appearing to show a transparent support layer, cannot cure the deficiencies of the primary reference. Since claim 7 depends from claim 1, as amended, the cited combination of references do not teach the claimed subject for at least the reasons set forth above concerning the rejection of claim 1.

Claims 8 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Molnar et al. as applied to claim 1, and further in view of Reinhardt et al. (U.S. Patent No. 5,578,362).

It is the Examiner's position that the Reinhardt patent discloses that hollow polymeric microelements are used in a matrix to form open pores on the surface of a polishing layer.

In the rejected claims, a liquid and hollow polymeric microelements are used simultaneously to attempt various changes in CMP performance. In other words, when the

hollow polymeric microelements are used, the sizes of pores cannot be adjusted, whereas, when the liquid is used, the sizes and densities of open pores formed on the surface of the polishing layer can be adjusted so that, when the liquid and the hollow polymeric microelements are used simultaneously, they can be applied to CMP for a variety of purposes and the performance of CMP can also be adjusted by various methods. This is not taught or suggested by the cited reference.

Claims 11 and 14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Molnar et al. as applied to claim 1, and further in view of Bruxvoort et al. (U.S. Patent No. 5,958,794).

It is the Examiner's position that the Bruxvoort patent discloses that used silicon oil and castor oil are commercially available with a polymeric matrix and are melted in a uniform phase within the matrix and act as a plasticizer.

However, with reference to the rejected claims, oil that is used by designing and applying a hydrophilic matrix is phase-separated from the matrix and the matrix forms a non-uniform phase and the oil exists in spherical droplets and thus does not act as a plasticizer. In other words, even when the same oil is used, the oil exists in a non-uniform phase by designing and applying the hydrophilic matrix and thus the oil does not act as a plasticizer and forms pores. Thus, the polishing pad recited in the rejected claims is different from the Bruxvoort patent.

Furthermore, the sizes of pores can be adjusted by a hydrophilic compound used in fabricating the hydrophilic matrix, i.e., the molecular weight and the total weight of polyethylene glycol (claims 4, 6) and are also adjusted by the content of the liquid used together therewith (claim 14). In other words, the sizes of pores cannot be only adjusted simply by sizes of pores can be adjusted by the molecular weight and the total weight of polyethylene glycol which is a hydrophilic compound used when the hydrophilic matrix is formed.

Thus, reconsideration of the rejections as presented is respectfully requested.

Applicants do not agree with the Examiner's interpretation of the Molnar reference as explained in paragraph 10 of the Official Action. The Applicants have explained the lack of teaching in the Molnar patent in responding to each of the aforementioned rejections. Applicants have not expressly traversed each statement to which they do not agree.

## CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 1 and 3-16 in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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